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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/773,490	02/06/2004	Jayendra H. Bheda	2003/03	6636

7590 06/27/2006

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EXAMINER	
TOSCANO, ALICIA	

ART UNIT	PAPER NUMBER
1712	

DATE MAILED: 06/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/773,490	BHEDA ET AL.	
	Examiner	Art Unit	
	Alicia M. Toscano	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 2, 4-6, 13, 15, 16, 18-20, and 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Malhotra (US Patent 5663029). Malhotra discloses a method for producing a recording sheet, or "film", which comprises a substrate with a polyester coating that is further reacted with an aromatic anhydride and contains an optional filler (see abstract and Column 51 Lines 39-40). Malhotra includes the use of 4-methyl phthalic anhydride, 2-phenyl glutaric anhydride and diphenylmaleic anhydride (See Claim 11; Column 51 Lines 35-40), or substituted anhydride, as required by the above claims. The applicant uses the same anhydrides as Malhotra and thus the same melting point can be inferred, as required by Claims 13, 29 and 30.

2. Claims 1, 2, 8, 10, 15, 22 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Pfaendner (US Patent 563681). Pfaendner discloses a process for increasing the molecular weight of polyester by heating a polyester with a tetracarboxylic acid dianhydride, or substituted cyclic anhydride, and a hyroxyphenylalkylphosphonic acid ester, or additive. The various tetracarboxylic acid dianhydrides, or substituted phthalic anhydrides, used by Pfaendner are disclosed in

Column 5 Lines 10-55. Said polyester is disclosed to be PBT (Column 4 Line 41) as required by Claim 10.

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-3, 5, 6, 14-17, 19, 20 and 27-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Moeller (US Patent 6630050 B1).

Moeller discloses a polyurethane, or polyamide, adhesive resin in which the polyurethane is end-capped with substituted cyclic anhydrides. The substituted cyclic anhydrides are disclosed to be tetrahydrophathalic anhydride, dimethyl maleic anhydride and dodecenyl succinic anhydride (Column 5 lines 21-39), encompassing claims 1-3, 5 and 6. Additives can be added to the adhesive, including antioxidants, as disclosed in Column 9 Lines 13-29. An adhesive coating, or film, is applied to a paper label in Column 10 Lines 11-28. As the additives and the anhydrides are equivalent to that of the applicant, the examiner finds the additive to be inherently non-reactive with the anhydride. As the cyclic anhydrides used are equivalent to the applicant, examiner finds the melt point of less than 100 or 25 degrees to be inherent to the cyclic anhydrides, as required by claims 29 and 30.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-3, 5-9, 14-17, 19-23 and 27, 28, and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang (US Patent 6342578 B1) in view of Moeller (US Patent 6630050 B1).

Huang discloses a resin comprising the reaction product of a polyester with a cyclic anhydride, which may contain additives. The resin is composed of terephthalate acid and ethylene glycol (Column 4 Line 22). The PET resin can optionally be reacted with 20 wt-% of isophthalic acid to produce a copolymer (Column 4 Lines 54-57). The amount of anhydride ranges from 0 to 200 microequivalents (Column 11, Table 6). Huang discloses the said additives to be selected from a group consisting of pigments, dyes, fillers, branching agents (Column 5 Line 13-17).

Huang discloses a method for producing polymer chips from said resin. The chip is made by the polycondensation of diols and diacids, ethylene glycol and terephthalate

acid (Column 4 Lines 20-24), or a copolyester of polyethylene terephthalate with up to 20 wt-% of isophthalic acid and can include additives such as pigments, dyes and fillers, which are inferred to be nonreactive with the cyclic anhydride as required by Claim 27.

A container obtained from blow molding, a process disclosed by Huang, is indistinguishable to one produced by injection molding, the process disclosed by the applicant, and thus the examiner finds that Huang has met the requirements of Claims 32 and 33. Huang does not disclose the use of substituted cyclic anhydrides. Moeller discloses the use of cyclic anhydrides to introduce ion-forming structural elements on OH-terminated oligomers (Column 5 Lines 20-40). Here, he discloses a range of substituted and unsubstituted anhydrides to be functionally equivalent. Such anhydrides include tetrahydrophathalic anhydride, dimethyl maleic anhydride and dodecenyl succinic anhydride.

It would have been obvious to one of ordinary skill in the art at the time of the invention to interchange the substituted anhydrides, as taught by Moeller, with the unsubstitued anhydrides, used by Huang since they are recognized functional equivalents in the art. The burden is on applicants to show unexpected results for the use of substituted anhydrides versus the unsubstituted anhydrides.

6. Claims 12 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moeller in view of Saunders. Moeller includes elements of the invention as discussed above. Moeller includes the use of polyamide, but not nylon 6 or nylon 6,6.

Saunders teaches that nylon 6 and nylon 6,6 are produced in large quantities and are substantially cheaper than other nylons (pg 192).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include in Moeller the use of nylon 6 and nylon 6,6 as cheap alternatives for the polyamide resin.

7. Claims 11 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang and Moeller in view of Yamamoto. (JP Patent No. 06100767A) Huang and Moeller include elements of the system as discussed above. Huang and Moeller do not disclose the use of polyethylene naphthalate or a copolyester of a polyethylene naphthalate copolymer. Yamamoto teaches a resin of polyethylene naphthalate to be functionally equivalent to a resin formed by polyethylene terephthalate (See Abstract).

It would be obvious to one of ordinary skill in the art at the time of the invention to replace the polyethylene terephthalate in Huang with polyethylene naphthalate, as taught by Yamamoto since they are recognized as functionally equivalent polyester resins.

Response to Arguments

Applicant's arguments filed 6/5/06 have been fully considered but they are not persuasive. Applicant has amended the claims to necessitate a substituted cyclic anhydride. Applicant claims that Huang does not disclose the use of substituted cyclic anhydrides and that rejection has been removed. Applicant claims Malhotra does not

disclose the use of substituted cyclic anhydrides. Examiner disagrees, see above rejection. Malhotra discloses the use of 4-methyl phthalic anhydride, 2-phenyl glutaric anhydride and diphenylmaleic anhydride (See Claim 11; Column 51 Lines 35-40). Applicant argues that a polyethylene naphthalate resin is not functionally equivalent to a resin formed by polyethylene terephthalate. Examiner disagrees, Yamamoto teaches these polymers to be functionally equivalent for use in a polyester resin. Applicant has not disclosed any evidence to contradict this. Applicant further argues that the interchange of anhydrides with substituted anhydrides would lead to an unpredictable chemical reaction. Examiner disagrees. The invention involves blending a substituted cyclic anhydride with a polyester or polyamide, where the cyclic anhydride will react at the O=C-O-C=O site. A substitution on the cyclic anhydride would not yield an unpredictable chemical reaction since the substitution does not react with the polyester. Since the substitution is a nonreactive species, it is predictable as to what reaction will occur and thus it would be obvious to use a substituted anhydride. Applicant further argues that Moeller is specific to polyurethane compounds, which are not claimed by the applicant. Examiner disagrees. Moeller teaches a method of introducing ion-forming structural elements by reacting the OH-terminate oligomers with a substituted cyclic anhydride. The polyester of the applicant is disclosed to be made of diols and diacids, resulting in an OH-terminated oligomer and nylon 6 or 6,6 will also have an OH-terminus, thus the use of polyurethane of Moeller is a moot point, as it is the terminus that is reacting with the cyclic anhydride.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alicia M. Toscano whose telephone number is 571-272-2451. The examiner can normally be reached on Monday to Friday 8:30 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 571-272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AMT

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